

REMARKS

The non-final Office Action mailed December 17, 2009 has been carefully reviewed. From the Summary page, claims 1-8 are pending and rejected. The Drawings filed July 7, 2006 have been accepted. Acknowledgment has been made of Applicant's Claim for Priority. The Information Disclosure Statements filed July 7, 2006 and September 15, 2008 have been considered.

By this response, claims 1-7 have been amended. Claim 8 has been canceled. No statutory new matter has been added. Support for the claim amendments can be found in the original specification.

Claim Rejection under 35 U.S.C. § 101

Claim 7 stands rejected as being directed to non-statutory subject matter. Allegedly, claim 7 is a program per se under MPEP 2106.01.

Applicant has clarified the language of claim 7 so that the program is tied to a processing system (e.g., CPU) which is considered statutory subject matter. Therefore, reconsideration and withdrawal of the rejection are requested by Applicant.

Claim Rejection under 35 U.S.C. §112, 2nd paragraph

Claims 1-8 stand rejected as allegedly indefinite. The rejection is traversed.

In claim 1, clarification was requested as to the term "tenting". This term has been replaced with the term "testing".

In addition, the Office Action alleges that a plurality of phrases using the "means" clause in claim 1 improperly invoke 35 U.S.C. § 112, sixth paragraph (e.g., means plus function). Similar assertions were made for independent claims 4 and 7. Applicant has corrected each instance of the "means" clause in claims 1, 4 and 7, and claims 2, 3 and 6, dependent thereon, to properly invoke mean-plus-function language under 35 U.S.C. § 112, sixth paragraph. Please see the amendments in the claims, *supra*. Thus, reconsideration and withdrawal of the rejections are requested by Applicant.

Claim Rejection under 35 U.S.C. § 103(a)

Claims 1-8 stand rejected as being unpatentable over Kawai et al. (US 5,313,395) in view of Santori et al. (US 7,076,411). The rejection as to claims 1-8 is traversed.

The instrument, method and program thereof, as defined in claims 1, 4 and 7, respectively, relate to simulation and modeling "transition" characteristics of an engine to evaluate performance criteria such as rotational speed, vehicle speed and exhaust temperatures

for efficient alteration of control values of an engine control unit (ECU). See paras. [0010-12] of PG Publ. 2009/0192774. Transition characteristics are useful during instances of acceleration and deceleration (*e.g.*, rotational speed and torque that changes with time).

As illustrated in FIG. 3, control values (*e.g.*, data) obtained from an actual engine 12 during transition testing are measured and stored in the actual ECU. These control values, defined as the “control map”, remain unaltered when relayed to the virtual test machine. A copy of the control values are sent to a model creating unit 2 and then transmitted to the to a virtual ECU 3. The control values are converted into engine signals and are sent to a simulation model 5 including a virtual engine. The control values are simulated and modeled until certain performance objectives have been met by an operator. The resulting “optimal” control values are sent directly to the actual engine by a switching unit 15 for transition testing.

Subsequently, the actual ECU feeds back the control map values to a virtual response correcting unit 7 which corrects the optimal control values with the control map values. Steady-state data relating to the control map is fed from the virtual correcting unit to the actual engine via the switching unit (*e.g.*, another switch). Therefore, a transition test in a transition state can be run again for a different control factor, without replacing the steady-state test data.

To one of ordinary skill in the art, Kawai does not suggest a set of transition control map values in an ECU which will remain unaltered, and a set of transition control values received by a virtual ECU which will be simulated and modeled to meet certain performance objectives. That is, Kawai offers no suggestion of holding outputs from an actual ECU as control values that are not examined and not changed, and of allowing outputs from a virtual ECU to be examined and to be changed. Kawai is interested only in determining the idle rotating speed of an engine.¹ Hence, only one factor is controlled in Kawai, unlike the present invention which simulates many control values.

Santori does not alleviate Kawai's deficiency in this regard. Therefore, the combination does not teach the features of claims 1, 4 and 7 as a whole.

In addition, Kawai does not suggest Applicant's means for switching. Again, Kawai is concerned only with one control factor.

On the other hand, FIG. 3 illustrates a plurality of switches (*e.g.*, V1-V6) relating to control and correction of various control values. For instance, certain switches can be turned on

¹ Idle speed is when the engine generates enough power to run without operating additional equipment.

while leaving other switches off. Various simulation results can be obtained when part of the control values are altered. Kawai's invention does not run various simulation using a means for switching. Santori does not alleviate Kawai's deficiency. Therefore, claims 1, 4 and 7 patentably distinguish over the combination.

For at least these reasons, reconsideration and withdrawal of the rejection are kindly requested by Applicant.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Therefore it is respectfully requested that the Examiner reconsider all of the presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, in the event that additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefore are hereby authorized to be charged to **Deposit Account No. 02-4300, Attorney Docket No. 034201 M 006**.

Respectfully submitted,

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